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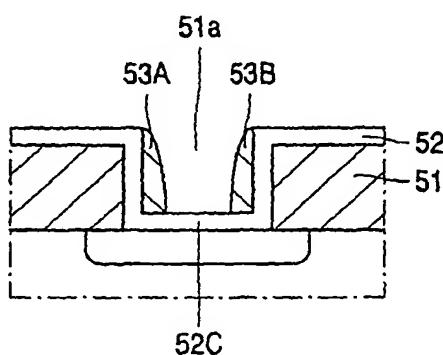
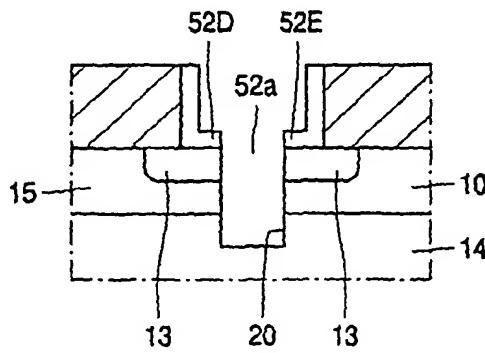
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD OF MANUFACTURING A TRENCH-GATE SEMICONDUCTOR DEVICE AND CORRESPONDING DEVICE



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(57) Abstract: The manufacture of a trench-gate semiconductor device, for example a power transistor or a memory device includes the steps of forming at a surface (10a) of a semiconductor body (10) a first mask (51) having a first window (51a), providing a thin layer of a second material (52) in the first window (51a), forming an intermediate mask (53A, 53B) of a third material having curved sidewalls and using the intermediate mask (53A, 53B) to form two L-shaped parts (52A, 52D and 52B, 52E) of the second material with a second window (52a) which is used to etch a trench-gate trench (20). The rectangular base portion (52D, 52E) of each L-shaped part ensures that the trench (20) is maintained narrow during etching. Narrow trenches are advantageous for low specific on-resistance and low RC delay in low voltage cellular trench-gate power transistors. Narrow deep trenches are also advantageous for cell density in DRAM devices where a memory cell has a switching transistor cell surrounded by a trench-gate and a storage capacitor in a lower part of the same trench.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 01/09330

A. CLASSIFICATION OF SUBJECT MATTER

| | | | | | |
|-------|------------|------------|-------------|------------|------------|
| IPC 7 | H01L21/336 | H01L21/331 | H01L21/8242 | H01L21/338 | H01L21/308 |
| | H01L29/78 | H01L29/739 | H01L27/108 | H01L29/812 | |

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, INSPEC, COMPENDEX, IBM-TDB, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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| A | cited in the application page 7, line 14 -page 10, line 31; figures 1-9 --- | 1-4,6,7 |
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
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| A | | 1,2,4 |

INTERNATIONAL SEARCH REPORT**Information on patent family members****International Application No****PCT/EP 01/09330**

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